MATP-616US

Appln. No.: 10/047,553
Amendment Dated March 1, 2006
Reply to Office Action of December 1, 2005

Remarks/Arguments:

Claims 1, 9 and 13 have been amended. No new material is introduced herein. Claims 1-14 are pending.

Support for the amendments to claims 1, 9, and 13 can be found, for example, in paragraphs [0021] and [0034] (read-only memory); paragraph [0046] (compatibility determination; paragraphs [0034] and [0045] (verification and restoring original software); and Figs. 1-3.

The specification was objected to as failing to provide antecedent basis for the claimed subject matter. In particular, it is asserted that the feature of a flash memory, cited in claim 6, is not disclosed in the subject disclosure. Applicant respectfully disagrees. Paragraphs [0006] and [0015], for example, in the subject disclosure describe that the smart card includes personal computer memory card international association (PCMCIA) Type I-III cards and Japan electronic industry development association (JEIDA) cards. One of skill in the art would be aware that PCMCIA Type I-III memory cards may include flash memory. (See for example, the enclosed Wikipidia article entitled "PC card"). Accordingly, applicant respectfully requests that the objection to the specification be withdrawn.

Claim 1 was rejected under 35 U.S.C. §102(e) as being anticipated by Prus et al. (U.S. Pat. App. No. 2005/0144651). This ground for rejection is overcome by the amendments to claim 1. In particular, Prus et al. do not disclose or suggest:

...a method of upgrading operational software in a host device having a smart card interface, <u>the host device including a read-only memory having original software</u> for the host device...

...<u>determining if the upgraded software is compatible with the host device</u> by comparing attributes of the upgraded software to that of the host device, the host device performing the determination of compatibility before the upgraded software is transferred from the smart card...

...<u>if the upgraded software is determined to be compatible, transferring the upgraded software from the smart card to a memory of the host device</u> to perform the code upgrade...

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>   ...verifying the software transferred to the memory using data stored on the smart card
>   and if the transferred software can not be verified, restoring the original software from
>   the read-only memory...

as required by claim 1 (emphasis added).

Prus et al. disclose, in Fig. 1, a settop receiver 150 that is connected to head end 101 which downloads software to settop receiver 150 (paragraph [0018]). Settop receiver 150 includes a bootloader 300 capable of detecting the presence of a smart card (paragraph [0033]). The bootloader 300 also checks for existence of operating system/control program software and downloads an operating system/control program from head end 101 if it detects a corrupt version in the host memory (paragraph [0026] and Abstract). Prus et al. do not disclose or suggest a method of upgrading operational software including "transferring the upgraded software from the smart card to a memory of the host device." Prus et al., instead, downloads an operating system/control program from a head end. Furthermore, Prus et al. do not 1) determine a compatibility of the upgraded software with the host device, or 2) transfer the upgraded software if the upgraded software is determined to be compatible, or 3) verify the software transferred to the memory or 4) restore the original software from the read-only memory in the host device if the transferred software can not be verified, as required by applicant's amended claim 1. Thus, Prus et al. do not include all of the features of claim 1. Because Prus et al. do not disclose or suggest all of the features of claim 1, claim 1 is not subject to rejection under 35 U.S.C. §102(e) as being anticipated by Prus et al.

Claims 5-6 and 8 were rejected under 35 U.S.C. §102(b) as being anticipated by Diehl et al. (U.S. Pat. No. 5,835,864). This ground for rejection is respectfully traversed. In particular, Diehl et al. do not disclose nor suggest:

>   ...a smart card for providing a code upgrade to an open cable compliant host device,
>   comprising a memory for holding upgraded software for delivery to the host device, the
>   memory also including a card information structure (CIS) for identifying the smart card
>   as a code upgrade card...

as required by applicant's claim 5.

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Diehl et al. discloses a <u>dedicated smart card</u> (see Col. 2, lines 3-6) that contains a CPU, a memory and an interface that functions as a reset, presents an application identifier and transmits data in a table that is used for customization (see Col. 2, lines 35-48). According to Diehl et al., the smart card may include channel allocation tables for different sites belonging to a program provider (Col. 2, line 66- Col. 3, line 1). Diehl et al. do not disclose or suggest that the smart card includes "a memory for holding upgraded software for delivery to the host device" or that the memory includes "a card information structure (CIS) for identifying the smart card as a code upgrade card," as required by applicant's claim 5. Although Diehl et al. disclose that the smart card includes a memory, the Diehl patent is silent regarding the memory holding upgraded software or the memory including a CIS for identifying the smart card as a code upgrade card. Thus, Diehl et al. do not include all of the features of claim 5.

Because Diehl et al. do not disclose all of the features of claim 5, claim 5 is not subject to rejection under 35 U.S.C. §102(b) as being anticipated by Diehl et al. Because claims 6 and 8 include all of the limitations of claim 5 from which they depend, claims 6 and 8 are not subject to rejection under 35 U.S.C. §102(b) as being anticipated by Diehl et al.

Claim 13 was rejected under 35 U.S.C. §102(b) as being anticipated by McClellan et al. (U.S. Pat. No. 5,619,250). This ground for rejection is overcome by the amendments to claim 13. In particular, McClellan et al. do not disclose or suggest:

...a method of providing a software upgrade to an open cable compliant host device... the host device including a <u>read-only memory having original software</u> for the host device...

...determining if the software upgrade is compatible with the host device by comparing attributes of the software upgrade to that of the host device, the host device performing the determination of compatibility before the software upgrade is read from the smart card...

...if the software upgrade is determined to be compatible, reading the software upgrade of the smart card and writing the software upgrade to a memory of the compliant host device...

...<u>verifying the software written to the memory</u> using data stored on the smart card and if the written software <u>can not be verified, restoring the original software from the read-only memory</u>...

as required by amended claim 13 (emphasis added).

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McClellan et al. disclose, in Fig. 2, a decoding system 40 including a PCMCIA interface 52 which accepts PCMCIA cards including system upgrades in the form of upgrade modules (Col. 7, lines 58-65). A new module is either placed in RAM 14 or FLASH memory 50 of the decoding system 40. If the upgrade is placed in FLASH memory, the upgrade is extendable beyond the current session (Col. 8, lines 12-23). McClellan et al. discloses that the original operating system software is stored in the ROM (Col. 6, lines 40-41). McClellan et al. do not disclose or suggest "verifying the software written to the memory using data stored on the smart card" or "if the written software can not be verified, restoring the original software from the read-only memory," as required by Applicant's claim 13. Although McClellan et al. disclose performing a validity check on a module to in order to avoid misidentifying random data (Col. 9, lines 17-33), McClellan et al. do not disclose verifying software that is written to memory using data stored on the smart card. McClellan et al. further do not disclose restoring the original software from the read-only memory if the written software can not be verified. McClellan et al., instead, disclose including multiple versions of an update stored in FLASH memory (Col. 8, line 51-66). Thus, McClellan et al. do not include all of the features of claim 13. Because McClellan et al. do not disclose all of the features of claim 13, claim 13 is not subject to rejection under 35 U.S.C. §102(b) as being anticipated by McClellan et al.

Claims 2 and 9-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Prus et al. in view of OpenCable Specification. Claim 2, however, includes all of the features of claim 1 from which it depends and is patentable over Prus et al. for at least the same reasons as claim 1.

The OpenCable Specification discloses a specification for an open cable host and point-of-deployment (POD) interface. The OpenCable Specification does not provide the deficiencies of Prus et al. because it does not disclose or suggest 1) that the host device includes a read-only memory having original software, 2) determining if upgraded software is compatible with the host device before the upgraded software is transferred from the smart card, 3) verifying the software transferred to the memory and 4) restoring the original software from the read-only memory if the transferred software can not be verified, as required by claim 1.

The cited art, taken singularly or in combination do not disclose or suggest all of the features of claim 1. Accordingly, claim 2, which includes all of the features of claim 1 from

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which it depends is also not subject to rejection under 35 U.S.C. §103(a) as being unpatentable over Prus et al. in view of OpenCable Specification.

The rejection of claim 9 is overcome by the amendments to claim 9. Neither Prus et al. nor the OpenCable Specification disclose or suggest:

> ...a read-only memory having original program data for the set top box...

> ...a bootstrap loader which is configured to control the processor to transfer program data from the POD interface to the memory to overwrite the operational software with upgraded software...

> ...determining means which determines whether the upgraded software is compatible by comparing attributes of the upgraded software to that of the host device and which verifies the program data transferred by the bootstrap loader using data stored on the smart card and, if the transferred program data can not be verified, restoring the original program data from the read-only memory...

> ...the set top box determines the compatibility before the upgraded software is transferred from the POD interface to the memory...

as required by amended claim 9 (emphasis added).

As described above, Prus et al. do not disclose or suggest 1) a read-only memory having original program data, 2) a bootstrap loader which is configured to control the processor to transfer program data from the POD interface to the memory to overwrite the operational software with upgraded software, 3) determining means which determines whether the upgraded software is compatible by comparing attributes of the upgraded software to that of the host device, 4) verifying the program data transferred by the bootstrap loader using data stored on the smart card and 4) restoring the original program data from the read-only memory if the transferred program data can not be verified, as required by amended claim 9. The OpenCable Specification is described above and does not provide the material missing from Prus et al. Accordingly, neither Prus et al. nor the OpenCable Specification include the features of amended claim 9.

Because Prus et al. and the OpenCable Specification, either alone or in combination, do not disclose all of the features of claim 9, claim 9 is not subject to rejection under 35 U.S.C. §103(a) as being unpatentable over Prus et al. in view of OpenCable Specification. Because

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claim 10-12 include all of the limitations of claim 9 from which they depend, claims 10-12 are not subject to rejection under 35 U.S.C. §103(a) as being unpatentable over Prus et al. in view of OpenCable Specification.

Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Prus et al. in view of the ATSC standard. Claim 3, however, includes all of the features of claim 1 from which it depends and is patentable over Prus et al. for at least the same reasons as claim 1.

The ATSC standard discloses a standard for a conditional access system for terrestrial broadcasting. The ATSC standard does not provide the deficiencies of Prus et al. because it does not disclose or suggest 1) that the host device includes a read-only memory having original software, 2) determining if the upgraded software is compatible with the host device before the upgraded software is transferred from the smart card, 3) verifying the software transferred to the memory and 4) restoring the original software from the read-only memory if the transferred software can not be verified, as required by claim 1.

The cited art taken singularly or in combination do not disclose or suggest the features of claim 1. Accordingly, claim 3, which includes all of the limitations of claim 1 from which it depends is also not subject to rejection under 35 U.S.C. §103(a) as being unpatentable over Prus et al. in view of the ATSC standard.

Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Prus et al. in view of OpenCable Specification and further in view of Kidder et al. (U.S. Pat. App. No. 2004/0031030).

Prus et al. and the OpenCable Specification are described above. Kidder et al. disclose an apparatus for facilitating hot upgrades of software components within a telecommunications network device using signatures generated by a signature generation program. Kidder et al. do not provide the deficiencies of Prus et al. because it does not disclose or suggest 1) that the host device includes a read-only memory having original software, 2) determining a if the upgraded software is compatible with the host device before the upgraded software is transferred from the smart card, 3) verifying the software transferred to the memory and 4) restoring the original software from the read-only memory if the transferred software can not be verified, as required by claim 1.

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The cited art taken singularly or in combination do not disclose or suggest the features of claim 1. Accordingly, claim 4, which includes all of the limitations of claim 1 from which it depends is also not subject to rejection under 35 U.S.C. §103(a) as being unpatentable over Prus et al. in view of OpenCable Specification and further in view of Kidder et al.

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Diehl et al. in view of McClellan et al. Claim 7, however, includes all of the features of claim 5 from which it depends and is patentable over Diehl et al. for at least the same reasons as claim 5.

McClellan et al. is described above. McClellan et al. do not provide the deficiencies of Diehl et al. because it does not disclose or suggest that a smart card includes "a memory for holding upgraded software for delivery to the host device" or that the memory includes "a card information structure (CIS) for identifying the smart card as a code upgrade card," as required by claim 5.

The cited art taken singularly or in combination do not disclose or suggest the features of claim 5. Accordingly, claim 7, which includes all of the limitations of claim 5 from which it depends is also not subject to rejection under 35 U.S.C. §103(a) as being unpatentable over Diehl et al. in view of McClellan et al.

Claim 14 was rejected under 35 U.S.C. §103(a) as being unpatentable over McClellan et al. in view of Kidder et al. Claim 14, however, includes all of the features of claim 13 from which it depends and is patentable over McClellan et al. for at least the same reasons as claim 13.

Kidder et al. is described above. Kidder et al. do not provide the deficiencies of McClellan et al. because it does not disclose or suggest "verifying the software written to the memory using data stored on the smart card" or "if the written software can not be verified, restoring the original software from the read-only memory," as required by claim 13.

The cited art taken singularly or in combination do not disclose or suggest the features of claim 13. Accordingly, claim 14, which includes all of the limitations of claim 13 from which
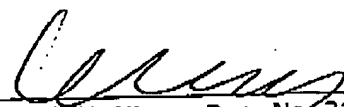
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it depends is also not subject to rejection under 35 U.S.C. §103(a) as being unpatentable over McClellan et al. in view of Kidder et al.

In view of the amendments and arguments set forth above, it is respectfully requested that the objection to the specification and the rejection of claims 1-14 be withdrawn.

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March 1, 2006

Patricia C. Boccella

PC card

From Wikipedia, the free encyclopedia
(Redirected from PCMCIA)

PC cards are cards designed to be inserted into laptop computers in order to enable extra functions.

They were first called **PCMCIA** cards as the original standards were set by the **Personal Computer Memory Card International Association**. This awkward initialism was jokingly expanded as "People Can't Memorize Computer Industry Acronyms" or "Personal Computer Manufacturers Can't Invent Acronyms". A later revision of the PC card is known as **CardBus**. The PCMCIA is also developing a new notebook peripheral specification called **Newcard or ExpressCard**.

The first PC cards (PCMCIA, with the more logical IBM meaning: Peripheral Component Microchannel Interconnect Architecture) were Type I, and supported actual Memory Cards (e.g. ATA Type I Flash Memory Cards), such as DRAM or flash memories. Type II cards added I/O support in addition to memory applications, and type III expanded on this. The interface's role as I/O for various devices has largely superseded its role as a Memory Card, but this role did spawn a generation of flash memory cards that set out to improve on the size and features of ATA Type I cards (CompactFlash, MiniCard, and SSFDC(Smartmedia)).

Contents

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- 2 CardBus
- 3 ExpressCard (Newcard)
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- 5 See also

Type II and III PC Cards. The Type III is twice the thickness of the Type II.

PC card

A PC card is about the size of a credit card. There are three different sizes, varying in thickness: Type I is 3.3 mm thick, Type II is 5.0 mm thick and Type III is 10.5 mm thick. All are 85.6 mm long and 54.0 mm wide. Most notebooks used to come with two Type II slots or one Type III. With the removal of legacy ports, most notebooks now only come with one Type II card slot. Fortunately, most Type III cards were normally external hard disks that have since been replaced with USB, FireWire and now Serial ATA solutions, along with flash memory options. Memory cards such as ATA Type I flash memory cards continue to be available for the PC Card Type I.

As the original name suggests, the first PC cards were for memory expansion. However, the existence of a usable general standard for notebook peripherals led to all manner of devices being made available in this form. Typical devices include network cards, modems and hard disks.

The electrical specification for the PC card is also used for CompactFlash, so a PC Card CompactFlash adapter need only be a socket adapter.

The form factor is also used by the Common Interface form of Conditional Access Modules for DVB broadcasts.

CardBus

The original PC Card bus was 16-bit, similar to ISA. CardBus is effectively a 32-bit, 33 MHz PCI bus, in the same physical form

as the earlier cards. The notch on the left hand front of the card is slightly shallower on a CardBus card so a 32-bit card cannot be plugged into a slot that can only accept 16-bit cards. Most new slots are compatible with both CardBus and the original 16-bit PC Card devices.

CardBus includes the bus mastering ability, which allows a controller on the bus to talk to other devices or memory without going through the CPU. Many chipsets are available for both PCI and CardBus cards, such as those that support Wi-Fi.
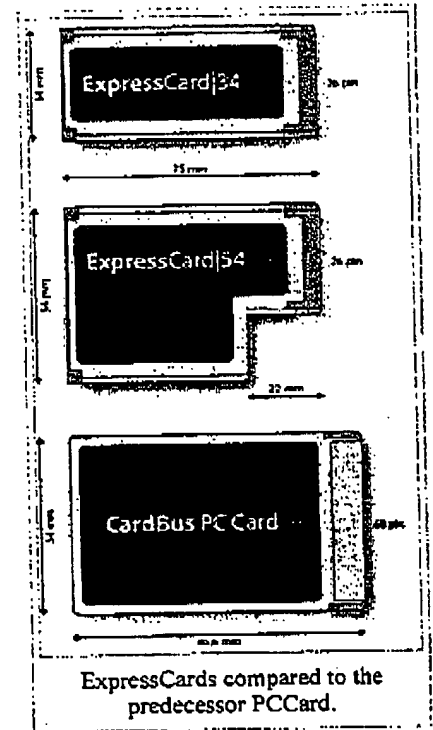
ExpressCard (Newcard)

The PCMCIA has developed a replacement for the present CardBus standard, called ExpressCard (originally codenamed *Newcard*), which is claimed to be faster and less complex than CardBus. The host device supports both PCI Express and USB 2.0 connectivity through the ExpressCard slot, and each card uses whichever the designer feels most appropriate to the task. The cards are hot-pluggable.

ExpressCard supports two form factors, ExpressCard/34 (34 mm wide) and ExpressCard/54 (54 mm wide, in an L-shape) — the connector is the same width (34 mm) on both. Standard cards are 75 mm long (10.6 mm shorter than CardBus) and 5 mm thick, but may be thicker on sections that extend outside the standard form factor — for antennas, sockets, etc.

Hewlett-Packard began shipping systems with ExpressCard in November of 2004, [1] (http://www.pcmag.com/article2/0,1759,1706542,00.asp)and Lenovo integrated the slot into their flagship ThinkPad T43 in May 05. [2] (http://www-131.ibm.com/webapp/wcs/stores/servlet/CategoryDisplay?catalogId=-840&storeId=10000001&langId=-1&dualCurrId=1000073&categoryId=2072541) Dell Computer also incorporates this in their Inspiron product line. Apple Computer replaced the standard PC Card slot with a single ExpressCard/34 slot in their MacBook Pro laptop in January 2006.

A large number of ExpressCard devices were presented at the CeBit trade show in Germany in March 2005. [3] (http://www.itnews.com.au/newsstory.aspx?ClaNCID=46&ClaNID=18253)

ExpressCards compared to the predecessor PCCard.

External links

- Personal Computer Memory Card International Association (http://www.pcmcia.org/about.htm)
    - PC Card overview (http://www.pcmcia.org/pccard.htm)
    - PC Card standard (http://www.pcmcia.org/pccardstandard.htm)
    - CardBus white paper (http://www.pcmcia.org/papers/new_bus.htm)
    - ExpressCard (http://www.expresscard.org/)
    - ExpressCard news clips (http://www.expresscard.org/web/site/news.jsp)
- Linux PCMCIA Information Page (http://pcmcia-cs.sf.net/)
- PCMCIA/CardBus Linux Status Survey (http://tuxmobil.org/pcmcia_linux.html)
- Video: How to insert and install drivers for a Wi-Fi PCMCIA card (http://www.airhive.net/modules.php?op=modload&name=4nAlbum&file=index&do=showpic&pid=22&orderby=dateD)

See also

- Information appliance

PC card - Wikipedia, the free encyclopedia

- compact flash
- random access memory
- hard disk
- PCI
- Universal serial bus (USB)

Memory Cards
CompactFlash (CF) | Memory Stick | Multimedia Card (MMC) | **PC card** | SmartMedia | Secure Digital (SD) | xD-Picture

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Categories: Computer buses | Standards organizations | Motherboard

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